ABSTRACT

A method of forming a strained silicon device and structures formed thereby is described. That method comprises forming a polysilicon layer on a first and second side of a substantially planar diamond coated silicon wafer, wherein the second side of the substantially planar diamond coated silicon wafer comprises defects, bonding a silicon device layer to a first side of the polysilicon layer, and removing the defects from the second side of the substantially planar diamond coated silicon wafer, wherein a tensile strain in the silicon device layer is induced that increases the electron mobility of the strained silicon device layer.